NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

HEDGEROW PLANTING
(Feet)
CODE 422

DEFINITION

Establishment of dense vegetation in a linear design to achieve a natural resource conservation purpose.

PURPOSES

Provide at least one of the following conservation functions:

- Food, cover and corridors for terrestrial wildlife.
- Food and cover for aquatic organisms that live in watercourses with full bank widths of less than 5 feet.
- Living fences.
- Boundary delineation
- Contour guidelines
- Screens and barriers to noise, odors and dust.
- Improvement of landscape appearance.

CONDITIONS WHERE PRACTICE APPLIES

Adjacent to irrigation reservoirs, farm ponds, farmsteads, equipment pads, along field borders or other areas where the primary goal is to establish wildlife habitat corridors, define fields or land use boundaries or establish barriers to dust, air-born odors, wind or noise pollution. Hedgerows should not be planted on or adjacent to earthen dams, dikes, levees or other sites where the integrity of a structure or the ability to perform necessary maintenance may be compromised.

CRITERIA

General Criteria Applicable to All Purposes

Hedgerows shall be established using woody plants, or perennial bunchgrasses producing erect stems attaining average heights of at least 3 feet and persisting well over winter.

Plants selected must be suited and adapted to the soils, climate and the intended conservation purpose. Refer to the appropriate MLRA Vegetative Soil Groups for irrigated and non-irrigated hedgerow planting recommendations. Careful consideration should be given to minimizing potential conflicts between hedgerow plantings and cultivated crops.

No plant listed by the state as a noxious weed shall be established in a hedgerow.

The practice shall be protected from livestock grazing and trampling to the extent necessary to ensure proper growth, establishment and survival.

Competing vegetation shall be controlled until the hedgerow becomes established. If necessary, control shall continue beyond the establishment period.

All planned work shall comply with Federal, state and local laws and regulations.

Additional Criteria for Wildlife Food, Cover and Corridors

Primary consideration should be given to the establishment of native plants, especially those that attract nectar-feeders, beneficial insects and other invertebrates that are critical components to the bio-diversity of the site.

Selected plants shall provide food, cover and/or nesting opportunities necessary to support the landowners wildlife habitat objectives.

During the establishment period, plantings should be protected from damage by browsing animals. If site monitoring indicates potential problems from deer, rabbits or other species, consideration should be given to installation of tree guards or other approved deterrent.

In plantings adjacent to small watercourses, selected species shall be site-adapted, large enough at maturity, and installed close enough to shade the watercourse.

Additional Criteria for Living Fences

Selected plants shall attain a size adequate to create a barrier to protect livestock, farmsteads or roads.

Additional Criteria for Boundary Delineation

Hedgerows shall be aligned along boundaries of fields or forestlands to differentiate land management units.

Additional Criteria for Contour Guidelines

Hedgerows shall be aligned so that they provide permanent contour reference markers, which support implementation of Contour Farming (330) or Contour Stripcropping (585) Conservation Practices. Refer to those practice standards for additional planning and design criteria.

Additional Criteria for Screens, Noise and Dust Barriers

Screening hedgerows provide privacy, hide unsightly areas from view or reduce noise.

Hedgerows shall be located where they most effectively impede objectionable sights, sounds, odors or dust.

Selected plants shall attain a height and fullness at maturity sufficient to fulfill the intended purpose.

Additional Criteria for Improvement of Landscape Appearance

The hedgerow design shall meet the aesthetic objectives of the landowner.

Plants shall be selected based upon the landowner's preference for color, texture and growth habitat.

CONSIDERATIONS

General

Hedgerows can be planned in combination with other practices in order to develop complete conservation systems that enhance landscape aesthetics, reduce soil erosion, trap sediments, improve water quality and provide wildlife habitat.

Hedgerows that follow land contours create meandering lines, producing a natural landscape appearance, and increase the availability of "edge."

Hedgerows containing a mixture of native grasses, shrubs and trees provide the greatest environmental benefits.

Consider the amount of shading a hedgerow will provide at maturity. Shading may impact growth of adjacent and understory plants, microclimate and aesthetics.

Avoid the use of plants that spread by root suckers as the hedgerow may expand beyond the desired treatment area.

Wildlife Food, Cover and Corridors

Hedgerows can provide travel lanes, or corridors that allow wildlife to move safely across a landscape.

Generally, wider corridors accommodate greater wildlife use.

Linking fragmented habitats will usually increase wildlife use in an area.

In grassland ecosystems, hedgerows may adversely affect area-sensitive nesting birds by fragmenting habitat patches and increasing the risk of predation.

Hedgerows can complement and extend the availability of naturally occurring wildlife foods.

Hedgerows can provide wildlife with cover for feeding, loafing, nesting and caring for young.

Dense, thorny shrub thickets can provide songbirds with important nesting sites and a refuge from predators and nest parasites.

Establishment of evergreen plants provides year-round concealment and thermal cover for wildlife.

Establishment of herbaceous vegetation along the outside edges of a hedgerow can improve diversity and enhance the habitat functions of the hedgerow.

Installation of artificial nest boxes with predator guards can attract cavity-nesting birds and small mammals.

Living Fences

Thorny shrubs and trees can improve a living fence's barrier effect

Screens and Noise Barrier

Consider the design of the hedgerow from viewpoints on both sides of the screen.

Locate noise barriers as close to the source of noise as possible.

A combination of trees and/or shrubs can create more effective screens than single species plantings.

Evergreen plantings should be considered as a way to improve the effectiveness of the screen throughout the year.

Improving Landscape Appearance

Consider plants' seasonal display of colors on bark, twigs, foliage, flowers and fruit.

Consider plants' growth habits (outline, height and width).

Incidental Trapping of Snow or Sand

Although not a primary purpose, hedgerows may incidentally trap wind-blown snow or sand.

Consider installing hedgerows on alignments that prevent trapping and accumulation of snow and sand on public roads.

Refer to the Windbreak/Shelterbelt Establishment (380) standard for criteria when snow or sand trapping is a primary conservation purpose.

Cultural Resources Considerations

NRCS's objective is to avoid any effect to cultural resources and protect them in their original location. Determine if installation of this practice will have any effect on any cultural resources.

Document any specific considerations for cultural resources in the design docket and the Practice Requirements worksheet.

GM 420, Part 401, the California Environmental Handbook and the California Environmental Assessment Worksheet provide guidance on how the NRCS must account for cultural resources. The Field Office Technical Guide, Section II contains general information, with Web sites for additional information.

Endangered Species Considerations

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation process indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Water Quantity

A hedgerow will increase surface water infiltration by improving soil structure around its root zone. However, evapotranspiration may reduce groundwater recharge benefits.

Water Quality

Water quality benefits may arise from:

- Arresting sediment movement and trapping sediment-attached substances.
- Infiltration and assimilation of plant nutrients.
- Water cooling effects resulting from increased shade on small watercourses.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice shall be prepared for each site and recorded using approved specification sheets, job sheets or narrative documentation in the conservation plan, or other acceptable documentation.

Design considerations shall include a minimum of 2 rows of plantings or planned width at maturity of no less than 15 feet.

Single row/single species plantings are acceptable for living fences, screening and the delineation of field borders or contour guidelines. For wildlife cover, single row plantings may be interrupted at regular intervals with alternative species.

Avoid creating blind corners at road intersections; do not plant closer than 30 feet from the edge of the right-of-way. For plantings under or immediately adjacent to power, telephone or similar aboveground facilities use shrubs or small tree species.

Spacing of plants shall depend on the species selected, width of the cultivation equipment, and the amount of land available for planting. For spacing guidelines see Windbreak / Shelterbelt Establishment - 380.

Isolation strips should be maintained on all plantings for a minimum of 8 feet or the width of the cultivation equipment plus 4 feet. Minimize fire hazards by keeping isolation strips clear of crop residues, weeds, and trash.

Site preparation to be preformed will depend on the need to eliminate all competitive growth, which may be accomplished by chemical or mechanical methods.

Water as required, particularly during the first 3 years of establishment. Once established, native perennial grasses should not need supplemental water. Trees and

shrubs, however, may need to be watered at a rate of 1 gallon/plant/week minimum during drought periods, March through November. Refer to irrigation guidelines for Windbreaks/Shelterbelt Establishment (380) for additional guidance.

OPERATION AND MAINTENANCE

Operation and maintenance recommendations shall be developed and presented to the client as part of the conservation plan. The plan should provide for on-site monitoring inspections and prompt repair or replacement of damaged components.

Supplemental planting may be required when survival is too low to produce a continuous hedgerow.

Vegetation shall be protected from unmanaged fire and grazing throughout its lifespan.

Pests shall be monitored and controlled.

Periodic applications of nutrients may be needed to maintain plant health and vigor.

Renovation activities shall be scheduled to prevent disturbance during the wildlife-nesting season.

Limiting the extent of renovation events to a maximum of one-third of a hedgerow's length or width will lessen the negative impacts to wildlife habitat functions.

Periodic root pruning can reduce nutrient and water losses from adjacent cropland.

REFERENCES

National Biology Handbook, Part 614.4, "Conservation Corridor Planning at the Landscape Level," Natural Resources Conservation Service, August 1999.

Yolo County Resource Conservation District, "Bring Farm Edges Back to Life!" November 1999.